



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,967	02/12/2004	Oleg Pliss	SUN04-0415	6036
22200 7590 03/30/2006				
PARK, VAUGHAN & FLEMING LLP				
39180 LIBERTY STREET				
SUITE 103				
FREMONT, CA 94538				
EXAMINER				
SCHLIE, PAUL W				
ART UNIT				
2186				
PAPER NUMBER				

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/777,987	Applicant(s) PLISS ET AL.	
	Examiner Paul W. Schlie	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-34 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
6) <input type="checkbox"/> Other: _____. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

DETAILED ACTION

1. Claims 1-34 have been examined.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a), as the drawings must show any structural detail essential for a proper understanding of the disclosed invention, and every feature of the invention specified in the claims. Therefore, for example, a more detailed depiction both newly allocated current generation and previously allocated and compacted earlier generation objects as would result with the claimed invention vs. that which would result with a conventionally well understood heap based generational allocation and garbage collection implementation is considered required beyond that depicted by figure 1, and correspondingly a more detailed depiction of any data structures and/or algorithms necessary to enable one of ordinary skill in the art to implement the claimed invention without undue experimentation should be added beyond that depicted in figure 2 if supported by the original disclosure, or canceled from the claims, as no new matter not supported by the original disclosure may be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended drawing sheets should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance; however the applicant is reminded that no new matter not supported by the original disclosure may be added.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-34 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. As elements critical or essential to the practice of the invention are neither included in the claims nor enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

More specifically, as no data structures nor corresponding algorithmic steps considered necessary to enable, without undue experimentation, one of ordinary skill in the art to implement the claimed invention, all claims are not considered enabled.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-34 are rejected under 35 U.S.C. 102(b) as anticipated by Jones et al.

("Garbage Collection, Algorithms for Automatic Dynamic Memory Management" 1996).

As per independent claims 1, 10-11, 20-22, 28, Jones et al. teaches that memory may be allocated and compacted within generational regions of varying dynamic and/or static extent (see section 7 "Generational Garbage Collection", figure 7.14, page 127 "Incremental incrementally compacting garbage collection" and figure 6.6), and thereby it is considered inherently taught to one of ordinary skill in the art at the time of the claimed invention, that either the lower or upper bounds of a new generation region of memory may be fixed or be allowed to dynamically expand as may be desired to accommodate new allocation requests or the result of intermediate compaction, for any conventional use by an application or within a system; as the claimed invention appears functionally undifferentiated from that of generic generational collector well understood by those of ordinary skill in the art, whose new generation region is periodically collected and compacted when deemed desirable prior to any remaining object being considered old (i.e. newly allocated objects anticipated to have a short lifetime are first collected and compacted within a new generation region [which may itself have its bounds adjusted] prior to an object remaining within its bounds being potentially considered a previous generation object).

As per claims 2-9, 12-19, 23-27 and 29-34, being dependent on claim 1, 11, 22, 28, it is considered inherent that an alert/notification/indication may be received by the

entity having responsibility for generational allocation and/or collection of memory regions and/or objects (as allocation and garbage collection requests are inherently performed by application code, and controlled from within the implementations of the same), and which correspondingly inherently maintains generational regions having various identified bounds within a windowed ranges which may vary as a generation is identified/requested to be allocated and/or collected (as correspondingly clearly depicted in figures 7.4 7.12- 7.15) from an entity having knowledge of the nature of the set of data requesting the same (claims 2-9); and as claims 12-19, 23-27 and 29-34 are considered to correspond to claims 2-9 in other format, they are correspondingly rejected based on the same arguments as above.


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765, or whose email address is [paul.schlie@uspto.gov]. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2186

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PIERRE BATAILLE
PRIMARY EXAMINER
3117106